

University of Pretoria Yearbook 2017

Evolutionary physiology 354 (ZEN 354)

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| Qualification | Undergraduate |
| Faculty | Faculty of Natural and Agricultural Sciences |
| Module credits | 18.00 |
| Programmes | BSc Entomology BSc Genetics BSc Plant Science BSc Zoology |
| Service modules | Faculty of Education |
| Prerequisites | No prerequisites. |
| Contact time | 2 practicals per week, 4 lectures per week |
| Language of tuition | Module is presented in English |
| Academic organisation | Zoology and Entomology |
| Period of presentation | Quarter 2 |

Module content

This module focuses on the integration of physiological systems in the context of animal form and function, and the ways in which evolution shapes the physiological processes that determine the energy, water and nutrient fluxes between animals and their environments. Topics covered include: (i) circulation, gas exchange and excretion; (ii) nutritional ecology; (iii) osmoregulation and thermoregulation; and (iv) reproductive physiology. The major focus of this module is to understand the major sources of physiological diversity, namely scaling, phylogenetic inertia, adaptation and phenotypic plasticity, and applying this knowledge to conceptually link physiological processes at the cellular level to macrophysiological patterns at a global scale.

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